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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of

Amendment of Part 90 of the  
Commission's Rules to Adopt  
Regulations for Automatic  
Vehicle Monitoring Systems

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PR Docket No. 93-61

DOCKET FILE COPY ORIGINAL

To: The Commission

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PETITION FOR PARTIAL RECONSIDERATION

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THE AMERICAN RADIO RELAY  
LEAGUE, INCORPORATED

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## SUMMARY

The American Radio Relay League, Incorporated (the League), the national non-profit association of amateur radio operators, requests that the Commission reconsider and reverse a portion of its Report and Order, FCC 95-41, 60 Fed. Reg. \_\_\_\_\_, released February 6, 1995; modified by Erratum, FCC 95-265, released February 17, 1995, and by Second Erratum, document number 52499, released March 1, 1995.

The Report and Order established permanent rules for a new Location and Monitoring Service (LMS). It constitutes a significant expansion, both in concept and in frequencies available within the 902-928 MHz band, of the Automatic Vehicle Monitoring Service that has operated in portions of the 902-928 MHz band under interim Part 90 rules for several years. Herein, the League specifically requests that the Commission reconsider and reverse its definition of "harmful interference" adopted in this proceeding relative to possible interactions between LMS and amateur stations, codified by the Report and Order at Section 90.361 of the Rules.

The Commission has, in this case, in fact made no accommodation for the Amateur Service. Rather, it has, after a series of procedural irregularities during the proceeding by the Commission's staff, accommodated an aging and superseded technology at the expense of a relatively compatible, though unplanned, sharing arrangement. It is also at the expense of the individual present sharing partners. Worse than that, it has adopted a standard which creates an arbitrary interference threshold, and in turn has effectively placed the entire interference resolution burden of any interaction on the amateur station; this, without even determining in advance the interference threshold of the wideband LMS facility. The existing amateur rules governing operation in the 33 cm band should be relied on instead as a means of addressing interaction between LMS systems and amateur stations.

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**PETITION FOR PARTIAL RECONSIDERATION**

The American Radio Relay League, Incorporated (the League), the national non-profit association of amateur radio operators, by counsel and pursuant to Section 1.429 of the Commission's Rules (47 C.F.R. §1.429), hereby respectfully requests that the Commission reconsider and reverse a portion of its Report and Order, FCC 95-41, 60 Fed. Reg. \_\_\_\_, released February 6, 1995; modified by Erratum, FCC 95-265, released February 17, 1995, and by Second Erratum, document number 52499, released March 1, 1995. The Report and Order established permanent rules for a new Location and Monitoring Service (LMS). It constitutes a significant expansion, both in concept and in frequencies available within the 902-928 MHz band, of the Automatic Vehicle Monitoring Service that has operated in portions of the 902-928 MHz band under interim Part 90 rules for several years. Herein, the League requests that the Commission reconsider and reverse its definition of "harmful interference" adopted in this proceeding relative to possible interactions

between LMS and amateur stations, codified by the Report and Order at Section 90.361 of the Rules. In support thereof, the League states as follows:

#### I. Introduction

1. The League is constrained to suggest that throughout this proceeding, the Commission has concerned itself with accommodation of Part 15 users and AVM proponents, and has neglected consideration of the impact on other users of the band from the expansion of multilateration AVM. The Concurring Statement of Commissioner Quello states that the Commission's decision may represent the best of three not very good alternatives. The League cannot agree, because it is not necessary, in order to acknowledge that AVM systems have been designed and built in reliance on operating in the 902-928 MHz band, to bring in multilateration LMS systems which are intolerant of interference and which themselves are a dominant use of an extensively shared band.

2. Prior to the Report and Order, non-multilateration AVM systems could operate in large portions of the band, together with Amateur stations, Part 15 and 18 devices, and Government radiolocation operations. This extensive sharing arrangement worked reasonably well, and could continue to work in the band. As a matter of basic spectrum allocation planning, it should be unthinkable in this environment to add a wideband service which can tolerate no interference in a shared band. Though the Commission might well have concluded in this proceeding that Part 15 devices

have no allocation status and are not "sharing partners" in the band, the Amateur Service is such, as are Government Stations, and the LMS systems have to tolerate interference from Part 18 devices. In such a situation, where LMS systems are subject to, and must tolerate, interference from Part 18 and Government Stations, it makes no sense to permit wideband systems which cannot tolerate interference. This is especially true where the LMS systems are subscriber-based systems, and the victim of the interference would be the consumer.

3. The only conclusion to be drawn from a spectrum management perspective is that the Commission has severely disrupted an existing compatible sharing arrangement in order to expand a type of use that is incompatible with virtually all of the existing users of the band. It has also diminished the utility of the band significantly for the Amateur Service in the process. That the Commission notes in the Report and Order a "well-established" (regulatory) hierarchy of users is not relevant to the environment actually created in a shared band. Finally, as the Commission has been told repeatedly in this proceeding, the regulatory plan for the 902-928 MHz band established at WARC-79, which led to the mobile and amateur allocations within Region 2, was to satisfy future requirements for services which do not require protection from interference. The addition of a wideband service which does require protection from interference is antithetical to the existing plan within Region 2 for the band.

4. Though this Petition is principally addressed to the Commission's attempt at accommodation of existing users after the introduction of an incompatible sharing partner in the 902-928 MHz band, it should be noted that the Report and Order in this proceeding is in no sense a "best" choice among bad ones. It is a bad choice among an artificially limited series of choices, made without serious consideration of alternatives to wideband, multilateration AVM, a technology that has in any event been superseded by GPS technology. The principal victims of the decisionmaking in this proceeding are the Part 15 manufacturers who were intentionally encouraged by the Commission, a scant five years ago, to develop consumer products for use in this band, and the Amateur Service, which has had a developing and increasing reliance on the band, and especially certain segments thereof, since 1985.

## **II. The Definitional Thresholds Established for Harmful Interference Are Inapplicable to the Amateur Service**

5. The Commission, at paragraph 34 of the Report and Order, recognizes the importance of the Amateur Service and its contributions to the public interest. It suggests that it is seeking in this proceeding to maximize the ability of Part 15 and amateur operations to coexist with the operation of LMS systems. Its approach, however, is principally aimed at accommodation of low-power Part 15 devices, to preclude claims of harmful interference by LMS operators. The Commission inappropriately lumped amateur operations in with Part 15 devices in the process, and has not only made inadequate provision for continued amateur

operation, it has in fact placed greatly increased burdens on the Amateur Service to resolve any interference to, especially, RF-susceptible multilateration LMS systems.

6. Paragraph 36 of the Report and Order claims that Amateur and Part 15 operations will continue to be "secondary"<sup>1</sup> to services with a higher allocation status. However, to accommodate the concerns expressed by both manufacturers of Part 15 devices and the League about continued operation in light of multilateration LMS, the Commission established a test,<sup>2</sup> setting forth maximum parameters for Amateur and Part 15 operation that, if met, would preclude a finding that the subject amateur station or Part 15 device is the cause of harmful interference to the multilateration AVM system.<sup>3</sup> The parameters that would be applied to amateurs, summarized, are as follows:

- It does not employ an outdoor antenna, or

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<sup>1</sup> Once again, the League is constrained to note that Part 15 (unlicensed) devices have no allocation status in the international table of frequency allocations. Neither are they recognized as a radio service by the ITU. In fact, it is difficult to find a statutory basis in the Communications Act for authorization of Part 15 devices. This is not to diminish the importance of adequate accommodation for such devices in this proceeding and otherwise. The point, however, is that the Commission has made a conceptual error in this and other recent spectrum allocation proceedings.

<sup>2</sup> The Commission terms it a "negative definition".

<sup>3</sup> The rule, and the Report and Order, make it clear that the "negative definition" applies only to interaction between Part 15 devices or amateur stations and Multilateration LMS systems. It does not address any interaction between Part 15 devices or amateur stations and non-multilateration LMS systems.



- It does employ an outdoor antenna with gain not greater than 6 dBi; or
- It employs an outdoor antenna with gain in excess of 6 dBi but reduces its TPO below one watt by the proportional amount that the directional gain of the antenna exceeds 6 dBi, and
  - The antenna is 5 meters or less in height AGL, or
  - The antenna is between 5 and 15 meters in height AGL and adjusts its TPO below one watt by  $20 \log (h/5)$  dB, where  $h$  = height AGL in meters.

This limitation effectively sets a maximum limit of 4 watts EIRP for amateur operation in the band, and is therefore a significant departure from other limitations on other shared amateur bands. Amateurs are generally, save for certain geographic limitations, permitted transmitter power at up to 1.5 kW PEP, with no ERP limitations or such lesser power as may be required to maintain communications. 47 C.F.R. §97.313. The proposed limitation on power places an absolute obligation on amateur operation that is simply inapplicable to most amateur installations. Because LMS systems inherently involve mobile components, it is difficult for an amateur fixed station to determine in advance when it may be interacting with a mobile LMS operation. Thus, the Commission has created an absolute limitation on all amateur operations over approximately four watts EIRP; that is the only power level that an amateur station could utilize without being held strictly liable for "causing" interference to its incompatible sharing partner. That limitation is so severe that it constitutes a practical

preclusion of amateur operation in any segment of 902-928 MHz used for multilateration LMS systems.

7. The Commission has done this completely arbitrarily, without the slightest effort at justifying the limitation as it would apply to the Amateur Service. The paragraphs establishing the basis for the limitation<sup>4</sup> refer only to typical Part 15 devices, and the power levels used by LMS systems by comparison to Part 15 devices. The only mention of the Amateur Service in the paragraphs establishing the "negative definition" (which is actually, as regards the Amateur Service, a "positive definition" of interference to multilateration AVM, and a strict liability definition at that) is with respect to the remedies that a multilateration LMS system has available to it. If the amateur station is operating within the limits of the new Section 90.361, the LMS system has no recourse, as the interference is not deemed to be harmful. It can only seek to obtain the cooperation of the Amateur or Part 15 device user. If the operation is outside the limitations of Section 90.361, the multilateration LMS operator may file a complaint with the Commission against the amateur. In such cases, Paragraph 38 of the Report and Order specifies what the Part 15 user may do voluntarily to resolve the matter, but it says nothing about what the amateur might do. The unstated answer, of course, is that the amateur may be ordered to cease operation on the band, or to reduce his or her operation to the levels specified

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<sup>4</sup> See Paragraphs 37 and 38 of the Report and Order.

in Section 90.361, which will render most types of amateur operation in that segment nonfunctional.

8. That the Commission's decision to apply the Part 15 negative definition to amateur stations is completely arbitrary is obvious on the face of the Report and Order: At footnote 210 thereof, the Commission states that it cannot determine the interference susceptibility of multilateration LMS systems, and can adjudicate such matters only on a case-by-case basis. This is because of the conclusion that absolute blocking of a licensee's transmissions throughout a large region would constitute the only clear-cut case of harmful interference. The same footnote acknowledges that it is "possible" that lesser degrees of interference could diminish the accuracy or reliability of certain multilateration systems in a limited portion of a system's area of operation. However, the Commission states:

The degree to which such lesser amounts of interference would be considered harmful cannot be determined in advance, and there can be no guarantee that licensees will be unconditionally protected from interference of this type. Because of these unique characteristics of multilateration systems, we decline to specify what will be considered to constitute harmful interference to such systems.

Report and Order, at fn. 210, p. 49.

It is therefore obvious that the Commission has not determined what the proper protection criteria for multilateration systems should be as a general matter, and it therefore must address such matters

on a case-by-case basis.<sup>5</sup> On the face of it, the creation of a negative definition of interference, even if it were designed to apply to the Amateur Service (which the instant one was not) could have no general application to interactions between amateurs and multilateration LMS. Therefore, the negative definition is not a proper guideline for the Amateur Service and it cannot reasonably be applied to limit amateur operation in the band. Neither should the regulatory flexibility that is the hallmark of the Amateur Service to operate in this shared band be compromised by the creation of an arbitrary interference standard that was designed to deal only with Part 15 and multilateration LMS interaction anyway.

9. For purposes of defining harmful interference between two Part 90 services generally, the Commission uses<sup>6</sup> a very slight variation on the standard definition of harmful interference for non-radionavigation, non-safety services found at No. 163 of the ITU Radio Regulations, which is as follows:

Interference which seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with these regulations.

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<sup>5</sup> Commissioner Quello forthrightly stated the situation as follows in his Concurring Statement:

Although I would not characterize the testing that has been done to date as anything more than fragmentary and inconclusive, I am not certain that a more rigorous testing would tell us more than we already know: that interference to and from Part 15 devices and AVM systems is likely to be sporadic, unpredictable and, beyond a certain point, intractable.

<sup>6</sup> See 47 C.F.R. §90.7.

The amateur regulations [see 47 C.F.R. §97.303(g)] not only includes the ITU definition of interference, but it also includes a requirement to protect AVM systems, as well as certain other users of the 33 cm band, from interference. There have been no tests conducted of which the League is aware of interference to multilateration AVM systems, nor, to the best of our knowledge, any published technical standards for determining the absolute or relative levels at which multilateration systems are susceptible to interference. Thus, it is not possible to calculate whether a given radio system will likely interfere with an AVM multilateration system or to determine how to design such a system to avoid such interference. A determination must be made by trial and test procedures, which is, after all, what amateurs do.

10. So, assuming for the moment that there is some justification for affording a wideband service such as multilateration systems protection from narrowband services in the same band, the case-by-case resolution of interference claims as between multilateration LMS and amateur stations should not be prejudged by the adoption of an extremely restrictive standard based on no empirical testing, and which is not in fact designed to address amateur operations anyway.

### **III. Conclusions**

11. The Commission is urged to reconsider and delete from the new Section 90.361 of the rules any application of the Part 15 negative definition to the Amateur Service. It is not a useful

concept for the Amateur Service at all. Far from assisting the Amateur Service in maximizing residual use of the band in the face of multilateration LMS, it is an arbitrary, strict-liability standard which all but assures that amateur operation in the band will cease altogether. The Commission has, in this case, in fact made no accommodation for the Amateur Service. Rather, it has, after a series of procedural irregularities during the proceeding by the Commission's staff, accommodated an aging and superseded technology at the expense of a relatively compatible, though unplanned, sharing arrangement. It is also at the expense of the individual present sharing partners. Worse than that, it has adopted a standard which creates an arbitrary interference threshold, and in turn has effectively placed the entire interference resolution burden of any interaction on the amateur station; this, without even determining in advance the interference threshold of the wideband LMS facility. The existing amateur rules governing operation in the 33 cm band should be relied on instead as a means of addressing interaction between LMS systems and amateur stations.

Therefore, the foregoing considered, the American Radio Relay League, Incorporated respectfully requests that the Commission reconsider and revise the Report and Order, and specifically the newly adopted Section 90.361 of the Commission's Rules, to make at

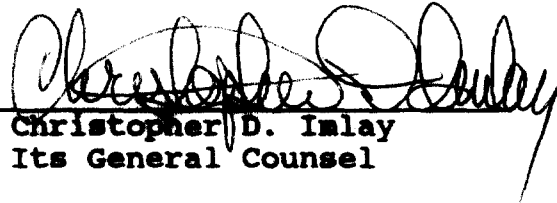
least minimal provision for continued Amateur Service operation in the 902-928 MHz band.

Respectfully submitted,

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